What is claimed is:



- 1. A dispersible dry powder for pulmonary delivery comprising a therapeutically effective amount of a therapeutic agent in combination with an aerogel particle which is soluble in human pulmonary surfactant.
- 2. The powder of Claim 1, wherein the aerogel particle is prepared by supercritical drying at a temperature of less than 40°C.
- 3. The powder of Claim 1, wherein the aerogel particle contains pores of about 1 to 100 nm.
- 4. The powder of Claim 1, wherein the aerogel particle has a surface area of about $100 \text{ to } 1,200 \text{ m}^2/\text{g}$.
- 5. The powder of Claim 1, wherein the aerogel particle has a density of about 0.01 to 0.001 g/cc.
- 6. The powder of Claim 1, wherein the aerogel particle has a particle size of about submicron up to about 3 microns.
- 7. The powder of Claim 1, wherein the aerogel particle is a carrier selected from the group consisting of sugars and carbohydrates.
- 8. The powder of Claim 1, prepared by co-gelling the therapeutic agent with a gel-forming material selected from the group consisting of sugars and carbohydrates.
- 9. The powder of Claim 1, prepared by the steps of (i) preparing porous gels of a carrier material which is soluble in pulmonary surfactant; (ii) soaking the porous gels in a solution of the therapeutic agent; (iii) removing the solvent and forming aerogels by supercritical drying; and (iv) comminuting the aerogels.

- 10. The powder of Claim 1, wherein the therapeutic agent is insulin.
- 11. The powder of Claim 1, wherein the therapeutic agent is methadone.
- 12. The powder of Claim 1, wherein the therapeutic agent is naltrexone.
- 13. A method of treating a disease state responsive to treatment by a therapeutic agent comprising pulmonarily administering to a subject in need thereof a physiologically effective amount of a dispersible dry powder comprising a therapeutically effective amount of a therapeutic agent in combination with an aerogel particle which is soluble in human pulmonary surfactant.
- 14. The method of Claim 13 wherein the powder is prepared by supercritical drying at a temperature of less than 40°C.
- 15. The method of Claim 14, wherein the powder is prepared by co-gelling the therapeutic agent with a gel-forming material selected from the group consisting of sugars and carbohydrates.
- 16. A method of preparing a therapeutic dry powder suitable for pulmonary delivery which comprises supercritical drying at a temperature of less than 40°C. a wet gel containing pores and a therapeutic agent within the pores.